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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,259	01/02/2002	Anna Charny	CISCP731	7467

26541 7590 03/07/2007
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EXAMINER

SERRAO, RANODHI N

ART UNIT	PAPER NUMBER
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2141

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/038,259

Applicant(s)

CHARNY ET AL.

Examiner

Ranodhi Serrao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-9,11,12,14-16,18-22,24,25 and 27-31 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

- 5) ☐ Claim(s) _____ is/are allowed.

- 6) ☒ Claim(s) 1,3-9,11,12,14-16,18-22,24,25 and 27-31 is/are rejected.

- 7) ☐ Claim(s) _____ is/are objected to.

- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see remarks, filed 16 January 2007, with respect to the rejection(s) of claim(s) 1, 3-9, 11-12, 14-16, 18-22, 24-25, and 27-31 under 35 U.S.C. have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art reference(s). The applicant argued in substance the limitations of independent claims 1, 8, 12, 15, 16, 21, 25, and 30. However, the new grounds teach these features. See rejections below.

Claim Rejections - 35 USC § 103

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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4. Claims 1, 4, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita et al. (2002/0172149) and Huang (2003/0117950).

5. As per claim 1, Kinoshita et al. teaches in a data communication network, a method for protecting a node, said method comprising processes of: identifying a node to be protected (see Kinoshita et al., ¶ 2); providing a backup bandwidth pool on links of said data communication network (see Kinoshita et al., ¶ 73); identifying a link pair traversing said node to be protected, said link pair having a bandwidth to be protected (see Kinoshita et al., ¶ 67); establishing as a backup for said link pair a set of one or more backup paths that do not include said node (see Kinoshita et al., ¶ 73) and wherein said one or more backup paths collectively have backup bandwidth greater than or equal to said bandwidth to be protected (see Kinoshita et al., ¶ 12); deducting, for each link included in said set of paths, from backup bandwidth available for protecting said node, while not deducting from backup bandwidth available for protecting other nodes in said data communication network (see Kinoshita et al., ¶ 116); and repeating said processes of identifying, establishing, and deducting for a plurality of link pairs traversing said node without exceeding available backup bandwidth of links used in establishing said backups (see Kinoshita et al., ¶ 126). But fails to teach wherein said bandwidth to be protected of said link pair comprises a lesser of primary bandwidths of links of said link pair traversing said node to be protected. However, Huang teaches wherein said bandwidth to be protected of said link pair comprises a lesser of primary bandwidths of links of said link pair traversing said node to be protected (see Huang, ¶ 35-40). It would have been obvious to one having ordinary skill in the art at the time of

the invention to modify Kinoshita et al. to wherein said bandwidth to be protected of said link pair comprises a lesser of primary bandwidths of links of said link pair traversing said node to be protected in order to prevent finding an entirely new path to avoid a single failure of a path segment in an original path by establishing a backup path at the time of the set up of the original path and, responsive to the single failure, the backup path is used to route traffic around the failed path segment (see Huang, abstract).

6. As per claim 4, Kinoshita et al.-Huang teach a method wherein said set of one or more paths comprises one or more label switched paths (see Kinoshita et al., ¶ 156).

7. As per claim 5, Kinoshita et al.-Huang teach a method wherein said processes of identifying and establishing occur under control of said node (see Kinoshita et al., ¶ 24).

8. As per claim 7, Kinoshita et al.-Huang teach a method further comprising: signaling said backups to other nodes adjacent to said node in said data communication network (see Kinoshita et al., ¶ 68).

9.

10. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita et al. and Huang as applied to claim 1 above, and further in view of Kodialam et al. (2002/0067693).

11. As per claim 3, Kinoshita et al. and Huang teach the mentioned limitations of claim 1 above but fail to teach a method wherein said bandwidth to be protected of said link pair comprises a total bandwidth of LSPs employing said link pair. However, Kodialam et al. teaches a method wherein said bandwidth to be protected of said link pair comprises a total bandwidth of LSPs employing said link pair (see Kodialam et al.,

¶ 32). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kinoshita et al. and Huang to a method wherein said bandwidth to be protected of said link pair comprises a total bandwidth of LSPs employing said link pair in order to guarantee minimum bandwidth for the path of a packet flow through the network (see Kodialam et al., ¶ 8).

12. As per claim 6, Kinoshita et al. and Huang teach the mentioned limitations of claim 1 above but fail to teach a method wherein said processes of identifying and establishing occur under control of a computer independent of said node. However, Kodialam et al. teaches a method wherein said processes of identifying and establishing occur under control of a computer independent of said node (see Kodialam et al., ¶ 73). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kinoshita et al. and Huang to a method wherein said processes of identifying and establishing occur under control of a computer independent of said node in order to route data through a network having a plurality of nodes interconnected by a plurality of links represented by a graph (see Kodialam et al., ¶ 15).

13. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita et al. and Ryutaro Kawamura, Ken-ichi Sato, and Ikuo Tokizawa, "Self-Healing ATM Networks Based on Virtual Path Concept," January 1994, IEEE, Vol. 12, No. 1, pages 120-127 (hereinafter referred to as Kawamura).

14. As per claim 8, Kinoshita et al. teaches a method for operating a data communication network to provide protection to nodes in said data communication

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network, said method comprising: maintaining, for each of a plurality of links in said data communication network, a primary bandwidth pool and a backup bandwidth pool (see Kinoshita et al., ¶ 73); and establishing backup tunnels to protect a plurality of nodes of said network (see Kinoshita et al., ¶ 156), each of said backup tunnels consuming backup bandwidth from backup bandwidth pools of selected ones of said plurality of links (see Kinoshita et al., ¶ 12); and wherein all backup tunnels protecting any particular node of said network do not consume more bandwidth on any link than provided by the link's backup bandwidth pool (see Kinoshita et al., ¶ 116) but wherein there is at least one set of backup tunnels that protect disparate nodes and that consume more bandwidth on at least one link than provided by said at least one link's backup bandwidth pool (see Kinoshita et al., ¶ 186). But fails to teach wherein establishing backup tunnels comprises signaling said backup tunnels with zero bandwidth to adjacent nodes of each protected node. However, Kawamura teaches wherein establishing backup paths comprises signaling said backup paths with zero bandwidth to adjacent nodes of each protected node (see Kawamura, page 121, col. 2). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kinoshita et al. to wherein establishing backup paths comprises signaling said backup paths with zero bandwidth to adjacent nodes of each protected node in order to simplify the message transmission process and reduce the number of generated messages by using preassigned backup virtual paths (see Kawamura, abstract).

15. As per claim 9, Kinoshita et al. and Kawamura teach a method wherein at least one of said backup tunnels comprises a label switched path (see Kinoshita et al., ¶ 156).

16. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura and Kinoshita et al. as applied to claim 8 above, and further in view of Kodialam et al. Kinoshita et al. and Kawamura teach the mentioned limitations of claim 8 above but fail to teach a method wherein establishing backup tunnels comprises: performing backup tunnel selection computations at each protected node for that protected node. However, Kodialam et al. teaches a method wherein establishing backup tunnels comprises: performing backup tunnel selection computations at each protected node for that protected node (see Kodialam et al. ¶ 28). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kawamura and Kinoshita et al. to a method wherein establishing backup tunnels comprises: performing backup tunnel selection computations at each protected node for that protected node in order to reserve link bandwidth and establish an NTP (see Kodialam et al., ¶ 8).

17. Claims 12, 14-16, 18-22, 24-25, and 27-31 have similar limitations as to claims 1, 3-9, and 11 above; therefore, they are being rejected under the same rationale.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ranodhi Serrao whose telephone number is (571) 272-7967. The examiner can normally be reached on 8:00-4:30pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571) 272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


RUPAL DHARIA
SUPERVISORY PATENT EXAMINER